

Claims

1. Gas chromatograph (1) with a downstream mass spectrometer (2), which is connected via a controllable inlet valve (12) to the output of a separation device (7) of the gas chromatograph  
5 (1) separating the materials of a substance mixture passing through it, with a detector (8) to detect the separated materials in a non-destructive manner being arranged in-line between the output of the separation device (7) and the inlet valve (12) and an evaluation device (11) being arranged downstream from the detector (8), which evaluates detector signals generated by the detector (8) and, depending on these signals, controls the inlet valve (12) for introduction of predetermined materials into the mass spectrometer (2).
- 10 2. Gas chromatograph in accordance with claim 1,  
15 characterized in that the detector (8) features a measurement path through which the substance mixture passes (28) of which the cross-sectional dimensions at least approximately correspond to the cross-sectional dimensions of the separation device (7).
- 20 3. Gas chromatograph in accordance with claim 2,  
characterized in that the detector (8) is a heat conductivity detector.
- 25 4. Gas chromatograph in accordance with claim 3,  
characterized in that the heat conductivity detector (8) features heat resistors (20, 21, 22, 23) arranged in a bridge circuit, with two of said heat resistors which lie diagonally opposite one another in the two different halves of the bridge (20, 21) being arranged in the measurement path (28).
- 30 5. Method for gas chromatographic analysis of a substance mixture, which, for separation of the materials contained

within it, is directed by means of a carrier gas (6) through a separation device (7) at the output of which the separated materials arriving are introduced for quantitative determination via a controllable inlet valve (12) into a mass spectrometer (2), with the separated materials being detected by a detector (8) arranged in-line between the output of the separation device (7) and the inlet valve (12) and, as a function of the detection, the inlet valve (12) being controlled for introduction of predetermined materials into the mass spectrometer (2).